REMARKS

Claims 1-9 and 20 are pending. Claims 1, 2 and 7-9 are amended. A marked-up version showing the changes made by the present amendment is attached hereto as "Version with Markings to Show Changes Made."

Claims 1-5, 7-9 and 20 were rejected under 35 USC§ 103(a) as being unpatentable over Shields, and claim 6 was rejected under 35 USC § 103(a) as being unpatentable over Shields in view of Yu. In the rejections, the Examiner considers Fig. 5 of Shields as teaching a first insulating layer 52 covering conductive film 51 with a third insulating layer 53 being interposed therebetween. Although Fig. 5 does not show a second insulating layer formed on the first insulating layer as required by the present claims, the Examiner argues that since Shields teaches forming additional interconnect multi-layers a second insulating layer would be formed on the first insulating layer. Favorable reconsideration is earnestly solicated.

A second insulating layer would not be formed on the first insulating layer even if Shields forms additional interconnect multi-layers. More specifically, it would appear that if one of ordinary skill in the art would form additional interconnect multi-layers on the structure of Fig. 5, then the insulating film 52 would simply be formed at an increased thickness in the same manner that the insulating film 53 was formed. As such, it does not appear that one of ordinary skill in the art would form a second insulating film on the first insulating film 52 of Shields.

It is clearly stated in the specification that the second insulating layer has a multilayer structure made up from layers of the same material, and by having this structure, it is possible to

prevent line defects from spreading or expanding even if line defects occur. In the second insulating layer of the present invention, each layer which constitutes the second insulating layer is formed separately from another layer so that an interface is formed between the layers. This is the most remarkable difference from a single insulating layer (an insulating layer that has the same thickness as the second insulating layer, but has only a single layer structure.) In the second insulating layer, any line defect having occurred in each layer is interrupted by each interface, so that no line defect extending over neighboring layers occurs. Accordingly, unlike the single layer, it is possible to prevent line defects from spreading or expanding.

The second insulating layer simply is not a single insulating layer formed on a first insulating layer, but it is the main feature including the effect as mentioned above. Each layer constituting the second insulating layer is formed separately from the other layers after the appropriate interval. In the specification, it is explained in detail that oxide films 13a to 13f are different from a single-layered oxide film. Accordingly, the effect as mentioned above can be obtained.

For at least the foregoing reasons, the presently claimed invention distinguishes over the cited art and defines patentable subject matter. Favorable reconsideration is earnestly solicited.

Should the Examiner deem that any further action by Applicants would be desirable to place the application in condition for allowance, the Examiner is encouraged to telephone Applicants' undersigned attorney.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees which may be due with respect to this paper, may be charged to Deposit Account No. 01-2340.

Respectfully submitted,

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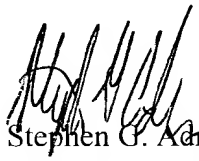

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Attachment: Version with Markings to Show Changes Made
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please amend claims 1, 2 and 7-9 as follows:

1. (Three Times Amended) A semiconductor device comprising an insulating interlayer formed on a conductive film and including a first insulating alyer of a composition containing SiH, and a second insulating layer formed on said first insulating layer,

wherein said first insulating layer has an H content of not less than 15.4 atom% in the composition, and has been formed to cover said conductive film with a third insulating layer being interposed therebetween, and

said second insulating layer has a multilayer structure made up from layers of the same material.

2. (Twice Amended) A semiconductor device comprising an insulating interlayer formed on a conductive film and including ~~an~~ a first insulating layer of a composition containing SiH, and a second insulating layer formed on said first insulating layer,

wherein a threshold at which a degassing amount from said first insulating layer abruptly decreases upon a slight increase in the SiH content exists in the relation between said SiH content of said first insulating layer and said degassing amount from said first insulating layer, ~~and~~

said first insulating layer has a SiH content not less than said threshold, and

said second insulating layer has a multilayer structure made up from layers of the same material.

7. (Twice Amended) A semiconductor device comprising a semiconductor element formed on a semiconductor substrate, and a multilayered interconnection structure formed over said semiconductor element and electrically connected to said semiconductor element,

wherein said multilayered interconnection structure is an interconnection structure of at least two layers in which a conductive film or a lower interconnection layer and an upper interconnection layer formed on an insulating interlayer are electrically connected through a contact hole formed in said insulating interlayer,

said insulating interlayer includes ~~an~~ a first insulating layer of a composition containing SiH, and a second insulating layer formed on said first insulating layer, a threshold at which a degassing amount from said first insulating layer abruptly decreases upon a slight increase in the SiH content exists in the relation between said SiH content of said first insulating layer and said degassing amount from said first insulating layer, ~~and~~

said first insulating layer has a SiH content not less than said threshold, and

said second insulating layer has a multilayer structure made up from layers of the same material.

8. (Three Times Amended) A semiconductor device comprising a semiconductor element formed on a semiconductor substrate, and a multilayer interconnection structure formed over said semiconductor element and electrically connected to said semiconductor element,

wherein said multilayered interconnection structure is an interconnection structure of at least two layers in which a conductive film or a lower interconnection layer and an upper interconnection layer formed on an insulating interlayer are electrically connected through a contact hole formed in said insulating interlayer,

said insulating interlayer includes a first insulating layer of a composition containing SiH, and a second insulating layer formed on said first insulating layer, ~~and~~

said first insulating layer has an H content of not less than 15.4 atom% in the composition, and has been formed to cover said conductive film or the lower interconnection layer with a third insulating layer being interposed therebetween, and

said second insulating layer has a multilayer structure made up form layers of the same material.

9. (Twice Amended) A insulating ~~film~~ interlayer formed on a conductive film and including ~~an~~ a first insulating layer of a composition containing SiH, and a second insulating layer formed on said first insulating layer,

wherein a threshold at which a degassing amount from said first insulating layer abruptly decreases upon a slight increase in the SiH content exists in the relation between said SiH content of said first insulating layer and said degassing amount from said first insulating layer, ~~and~~

said first insulating layer has a SiH content not less than said threshold, and

said second insulating layer has a multilayer structure made up from layers of the same material.